IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A mobile robot comprising:

an image capturer that captures, at predetermined intervals, images of a bottom surface in accordance with motion of a the mobile robot by using an image sensor;

a memory that stores images output from the image capturer;

a displacement measurer that measures displacement with respect to the captured image;

a comparator that compares an image presently output from the image capturer with an image previously stored in the memory; and

a microcomputer that outputs an actual moving distance by direction and motion of the mobile robot on the basis of a value of the measured displacement and a value of the compared images.

2. (Canceled)

3. (Currently Amended) The mobile robot of ~~claim 2~~ claim 1, wherein the displacement measurer measures a moving path of pixels of an image of each frame output from the comparator.

4. (Previously Presented) The mobile robot of claim 1, wherein the image capturer captures an image of the bottom surface having 18*18 pixel and 64-degrees brightness by 1500 frames per second.

5. (Previously Presented) The mobile robot of claim 1, wherein the image capturer includes:

a luminous diode for irradiating light;

a light guide for guiding the irradiated light; and

an image sensor for capturing an image of the bottom surface by sensing an intensity variation of light reflected from the bottom surface through a lens in accordance with motion of the mobile robot.

6. (Currently Amended) A method for measuring a moving distance of a mobile robot comprising:

capturing, at predetermined intervals, an image of a bottom surface according to motion of a mobile robot by utilizing an image sensor;

storing images output from the image capturer in a memory;

measuring displacement between the captured two images by comparing an image presently output from the image capturer with an image previously stored in the memory; and

outputting an actual moving distance by calculating direction and motion of the mobile robot on the basis of a value of the measured displacement.

7. (Canceled)

8. (Previously Presented) The method of claim 6, wherein the capturing comprises dividing the image into a predetermined number of pixels, each pixel receiving light reflected onto the bottom surface according to a material of the bottom surface and is discriminated by black and white brightness.

9. (Original) The method of claim 8, wherein the image is captured by 1500 frames per second so as to have 18*18 pixels and 64-degress brightness.

10. (Previously Presented) The method of claim 9, wherein the actual moving distance is calculated by dividing a pixel moving distance by a predetermined time of about 1/1500sec.

11. (Previously Presented) The method of claim 8, wherein the displacement measuring comprises measuring a moving distance according to direction of the pixel and magnitude of movement in the image.

12. (Previously Presented) The method of claim 6, wherein, in the displacement measuring, when two captured images are the same, it is judged that the mobile robot is not moving, and when two captured images are not the same, it is judged that the mobile robot is moving.

13. (Currently Amended) A mobile robot comprising:

an image capturer that captures, at predetermined intervals, images of a predetermined surface based upon motion of the mobile robot, the mobile robot being configured for movement with respect to the predetermined surface;

a memory that stores images output from the image capturer;

a displacement measurer that measures displacement in accordance with the captured image;

a comparator that compares an image presently output from the image capturer with an image previously stored in the memory; and

a calculator that outputs a moving distance on the basis of a value of the measured displacement and a value of the compared images.

14. (Previously Presented) The mobile robot of claim 13, the image capturer including an image sensor.

15. (Canceled)

16. (Previously Presented) The mobile robot of claim 13, wherein the image capturer comprises:

a luminous diode that radiates light;

a light guide that guides the light radiated by the luminous diode; and

an image sensor that captures an image of the predetermined surface by sensing an intensity variation of light reflected by the predetermined surface through a lens in accordance with a motion of the mobile robot.

17. (Previously Presented) The mobile robot of claim 13, wherein the displacement measurer is configured such that when each of two captured images are the same, it is determined that the mobile robot is not moving and when each of two captured images are not the same, it is determined that the mobile robot is moving.

18. (Previously Presented) The method of claim 6, wherein when two captured images are the same, the mobile robot is determined to not be moving and when two captured images are different, the mobile robot is determined to be moving.